APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,626	07/16/2003	Junichi Takeuchi	040405-0363	7292

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FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER
FERNANDEZ RIVAS, OMAR F

ART UNIT	PAPER NUMBER
2129	

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/619,626	TAKEUCHI ET AL.
	Examiner	Art Unit	
	Omar F. Fernández Rivas	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *16 July 2003*.

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-12* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-12* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *16 July 2005* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some * c) ☐ None of:

    1. ☒ Certified copies of the priority documents have been received.

    2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>S1</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-12 are pending on this application.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions
and requirements of this title.

3. Claims 1-12 are rejected under 35 U.S.C. 101 because the claimed invention is
directed to non-statutory subject matter. If the "acts" of a claimed process
manipulate only numbers, abstract concepts or ideas, the acts are not being applied
to appropriate subject matter. Shrader, 22 F.3d at 294-95, 30 USPQ2d at 1458-59.
Thus a process consisting solely of mathematical operations, i.e., converting one set
of numbers into another set of numbers, does not manipulate appropriate subject
matter and thus cannot constitute a statutory process. See MPEP 2106 IV B 1.
While trivial in nature, the subject claims can be implemented using pencil and
paper.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that
form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (b) the invention was patented or described in a rinted

publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the

date of application for patent in the United States.

5. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Biliris et

al (US Patent 6,055,491, referred to as **Biliris**).

Claims 1 and 7

Biliris anticipates a data updating device that updates the sufficient statistic of the

autoregressive model with forgetting the past data using newly read data and a

parameter calculator that reads the sufficient statistic updated by said data updating

device and calculates the parameter of the autoregressive model using the sufficient

statistic (**Biliris**, C4: 42-62; Examiner Note (EN): In light of the description of an

autoregressive model made by the applicant on paragraph 64 lines 2-4 of the

specifications, the examiner considers an Exponentially Forgetting Recursive Least

Square Method as an autoregressive model since it is a Linear Regression method

used to find the best fitting line through a series of points to find a probability

distribution of these points to make a prediction of where the next point in the series

will lie).

Claims 2 and 8

Biliris anticipates a first model learning device that learns the generation

mechanism for the read data series as the time-series statistic model specified by

the finite number of parameters (**Biliris**, C5: 47-67, C6: 1-7; Fig. 2), and

an outlier score calculator that reads the value of the parameters obtained

through learning by said first model learning device, calculates the outlier score of

the data based on the read parameter of the time-series model and the input data

and outputs the results (**Biliris**, C7: 3-16, C12: 13-15).

Claims 3 and 9

Biliris anticipates a moving average calculator that sequentially reads the outlier

scores calculated by said outlier score calculator and calculates their moving

average (**Biliris,** C11: 39-41; Fig. 1; EN: a linear regression can be considered as a

moving average since it uses past data to generate a projection of the behavior of

the data),

a second model learning device that sequentially reads the moving average of

the outlier scores calculated by said moving average calculator and learns the

generation mechanism for the moving average series in the read score as a time-

series statistic model specified by the finite number of parameters (**Biliris**, C11: 19-

41),

a change point score calculator that reads the parameter value obtained by

learning by said second model learning device and calculates the outlier score for

each moving average based on the read parameter of the time-series model and the

moving average of the input outlier scores and outputs the outlier score for each

moving average as the change point score of the original data (**Biliris,** C11: 19-41,

C12: 10-15; EN: correlation measures the change between data points).

Claims 4 and 10

Biliris anticipates said first model learning device learns, in case the sequentially

input data are described with continuous variate only, the probability distribution for

generation of said data string with sequentially reading the data strings of the real

number vector values using the autoregressive model and further comprises a data

updating device to update the sufficient statistic of the autoregressive model with

forgetting the past data using the newly read data and a parameter calculator to read

the sufficient statistic updated by said data updating device and to calculate the

parameter of the autoregressive model using the sufficient statistic (**Biliris,** C4: 42-

54; Fig. 3).

Claims 5 and 11

Biliris anticipates said outlier score calculator and said change point score

calculator are considered as a single score calculator, further comprising as a device

to determine the candidates of outliers and change points in the series for the data

series described in discrete and/or continuous variates, a sort device to sort the data

in descending order based on the outlier score and the change point score

calculated by said score calculator and the display device that displays the data with higher scores according to the order sorted by said sort device as the candidates of outliers and change points (**Biliris**, C6: 45-54 and Fig. 3).

Claims 6 and 12

Biliris anticipates said outlier score calculator and said change point score calculator are considered as a single score calculator, further comprising, as a device to determine candidates of outliers and change points in the series for the data described in discrete and/or continuous variates sequentially input, a score judgement device that outputs the data over the predetermined threshold from the outlier score and the change point score calculated by said score calculator as the candidates of outliers or change points (**Biliris**, C11: 19-41; EN: a window size is a threshold).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Goodman et al US Patent 6,697,769

Melamed et al US Patent 5,257,364

Shaw et al "Automated Error Detection in Multibeam Bathymetry Data", IEEE Publication, 1993.

Burge et al "Detecting Cellular Fraud Using Adaptive Prototypes".

7. Claims 1-12 are rejected.

Correspondence Information

8. Any inquires concerning this communication or earlier communications from the examiner should be directed to Omar F. Fernández Rivas, who may be reached Monday through Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at (571) 272-2589 or email omar.fernandez rivas@uspto.gov.

If you need to send an Official facsimile transmission, please send it to (571) 273-8300.

If attempts to reach the examiner are unsuccessful the Examiner's Supervisor, David Vincent, may be reached at (571) 272-3080.

Hand-delivered responses should be delivered to the Receptionist @ (Customer Service Window Randolph Building 401 Dulany Street Alexandria, VA 22313), located on the first floor of the south side of the Randolph Building.

Omar F. Fernández Rivas
Patent Examiner
Artificial Intelligence Art Unit 2129
United States Department of Commerce
Patent & Trademark Office

Tuesday, November 08, 2005.